1872MNRAS..32...82L

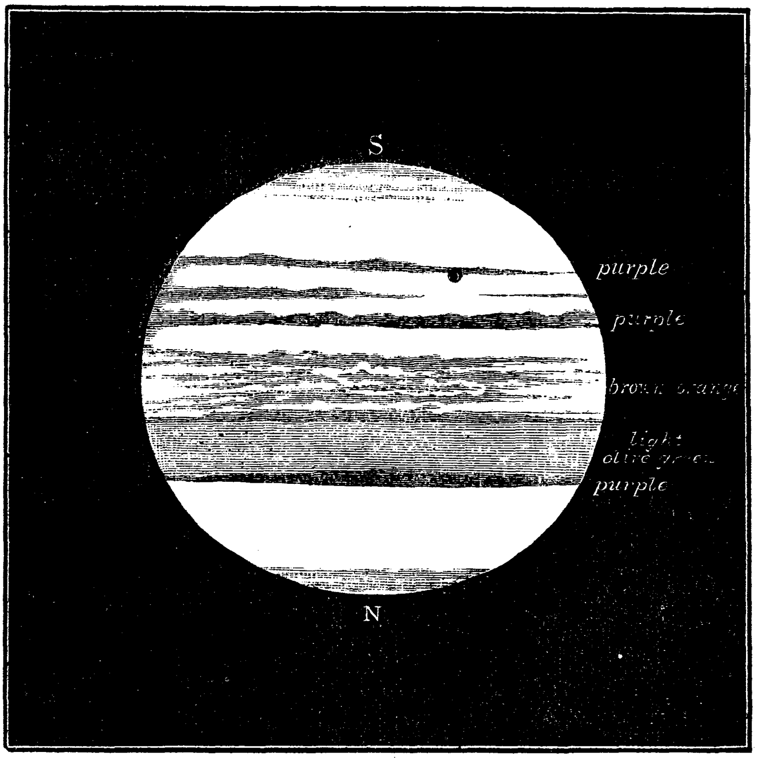
preparations for that numerical work by which each observation would be made to bear its part in the correction of elements and in the ultimate test of the theory.

Royal Observatory, Greenwich,
1871, *December* 26.

Remarks on the Planet Jupiter. By W. Lassell, Esq.

I send a sketch and a few remarks upon the planet *Jupiter.*

Now that the fourth satellite has begun again for a season to cross the planet's disk, I have looked out for opportunities of observing its transit, and was favoured on the night of the 30th Dec. last by witnessing a part of its passage over the disk under circumstances more than usually propitious.



On its first entrance it was scarcely to be distinguished from the limb, not appearing at all, as the others generally do, as a round, bright spot. As it advanced it grew gradually manifestly darker than the surface of the planet, and by the time it had advanced a fourth of the way across, it had become a very dark if not a *black* spot,—so dark indeed that if I had looked at

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Jupiter without knowing any thing of the positions of his satellites, I should have said that a *shadow* was transiting. I remember having seen the like phenomenon many years ago; but my impression is that I had never seen the disk of the satellite so near to absolute blackness before. Of course it is only by contrast that it can possibly so appear; and we have in this fact a striking proof of the exceeding brilliancy of the surface of the planet. In the same way the solar spots, if not surrounded by the marvellous splendour of the Sun's surface, would doubtless appear as brilliant objects.

But this was not the phenomenon which struck me most in this rare and exquisite view of *Jupiter*. I acknowledge that I have hitherto been inclined to think that there might be some exaggeration in the *coloured* views I have lately seen of the planet; but this property of the disk in the view I am describing was so unmistakable, that my scepticism is at least beginning to yield.

I have attempted in the accompanying drawing, to represent the colours as faithfully as I can, and to convey something like a general notion of the distribution and intensity of the various lights and shades scattered over the planet; but to give any thing like a faithful outline of the individual phenomena so beautifully displayed on this occasion, is far more than I can pretend to. It is one of the advantages of a Newtonian reflector, when the alloy of the specula is well compounded, that colours of the planets are more faithfully represented than they can be by refracting telescopes, the want of perfect achromatism in the latter generally introducing some modifying tinge.

The picture is the result of the use of various powers,—260, 430, and 579, the last too high for the state of atmosphere,—and it was a doubtful point which of the others was to be preferred, though there were tranquil moments of the atmosphere when I thought 430 revealed the most. The aperture was 24 inches, which indeed I rarely diminish.

I may add further that the variety of colour is most obvious with the higher powers, and when the atmosphere will not permit their use the tints are scarcely apparent.

As the coloured drawing may present some difficulty of reproduction I inclose also a pencil drawing, with the names of the tints or colours opposite the respective parts, which may in some degree supply the place of the coloured drawing.

Ray Lodge, Maidenhead,
Jan. 2, 1872.

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